Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 – 69 (Cancelled)

70. (New) A process for the parallel separation of a multiplicity of individual samples in a separation medium, which process comprises the following steps

(a) a first space which essentially extends across all three space coordinates contains the separation medium, which fills this first space in the direction of all three space coordinates and is permeable for the individual samples,

(b) a multiplicity of individual samples is arranged close to an interface of the first space,

(c) the individual samples are essentially arranged in such a way that the positions of their centers of gravity can be described by two coordinates,

(d) in the direction of a third coordinate and under the influence of one or more physical or chemical parameters, a multiplicity of the individual samples migrate through the separation medium in the joint space to realize a separation into fractions,

(e) for a multiplicity of individual samples being two-dimensionally arranged and being separated in the joint space, the sample fractions are detected and, alternatively or additionally, preparatively collected.

71. (New) The process as claimed in claim 70, wherein during migration, the individual samples are detected in selected regions within the separation medium or close to an interface of the separation medium.

72. (New) The process as claimed in claim 70, wherein electrode elements are arranged in such a way that, when applying an electrical voltage, the individual samples migrate through the separation medium essentially perpendicularly to the plane of their application.

73. (New) The process as claimed in claim 70, wherein the first space a temperature distribution is generated and maintained which is essentially independent of a coordinate running perpendicular to the direction of sample migration.

74. (New) The process as claimed in claim 70, wherein the sample is applied by two-dimensionally arranging the individual samples in or on an essentially two-dimensional sample plate which can be introduced into the separating device from the outside or which is part of the separation medium.

75. (New) A process of distributing particles in or on a sample plate, wherein a device or a process is used in which the particles are distributed according to measured physical or chemical properties.

76. (New) The process as claimed in claim 75, wherein the 2-dimensional distribution of particles, is carried out using a device or process in which said particles are distributed owing to measured properties.

77. (New) The process as claimed in claim 75, wherein the two-dimensional distribution of the particles is carried out using a device or process in which the particles are distributed for example by a cell sorter or a fluorescence-activated cell sorter (FACS).

78. (New) The process as claimed in claim 75, wherein the individual samples are multiplied from individual molecules or from a multiplicity of molecules.

79. (New) The process as claimed in claim 78, wherein the individual samples are multiplied by cloning and subsequent selective propagation.

80. (New) The process as claimed in claim 78, wherein the individual samples are multiplied by cloning and subsequent selective propagation in or on a sample plate into which host organisms such as, for example, yeasts, bacteria or "competent cells" have been distributed.

81. (New) The process as claimed in claim 77, wherein the individual samples are multiplied by means of PCR.

82. (New) The process as claimed in claim 74, wherein the individual samples are arranged in or on a sample plate as fractions of a preseparation or one or more source samples(s).

83. (New) The process as claimed in claim 82, wherein the sample plate consists of or contains a separation medium and the fractions are arranged by separating one or more samples in the sample plate.

84. (New) The process as claimed in claim 83 wherein the samples for their part are fractions of one or more preceding separation(s) with different separation properties, which fractions have been transferred to the sample plate by preparative transfer.

85. (New) The process as claimed in 82, wherein the process is used for analyzing protein mixtures or for analyzing metabolic products.

86. (New) The process as claimed in claim 75, wherein the sample fractions are detected by means of a confocal detection apparatus such as a spot- or cylindrical-confocal detection apparatus.

87. (New) A device for carrying out the process as claimed in claim 70, wherein

(a) the separating structure comprises a hollow space which essentially extends across 3 space coordinates,

(b) the hollow space is designed so as to be filled with a separation medium, which extends within the space in the direction of all three space coordinates and is permeable for the individual samples,

(c) a device which enables a multiplicity of individual samples which are to be fractionated at an end face and which are essentially arranged two-dimensionally in a plane to be delivered to the separation medium is assigned to the separating structure,

(d) the separating structure is designed in such a way that at least one or more of the following physical or chemical parameters can act on the samples: an electric field, a pressure gradient, an osmotic force, gravity, centrifugal

force, and that the individual samples can migrate within the separation medium in the direction of a third coordinate to realize a separation into fractions,

(e) a device for detecting the sample fractions of a multiplicity of two-dimensionally arranged individual samples or a device for preparatively collecting said sample fractions of a multiplicity of two-dimensionally arranged individual samples is assigned to the separating structure.

88. (New)The device as claimed in claim 87, wherein an online detection apparatus which records emitted radiation only of an essentially planar detection area is assigned to the separating structure.

89. (New) The device as claimed in claim 88, wherein a fraction-collecting device which comprises:

(f) a transport mechanism for plates or layers, for example membranes, which are periodically changed by said transport mechanism at an interface of the separation body so that the sample fractions eluting there are bound on different plates or subareas of a layer or membrane, depending on the retention time, or

(g) a capillary array with inlets close to an interface of the separation medium and outlets via a fraction-collecting device so that the sample fractions when eluting from the separation body can be directed through the capillary array out of the separating structure,

is assigned to the separating structure.

90. (New) The device as claimed in claim 88, wherein the separating structure is designed in such a way that

(h) electrodes are located on two sides (end sides) of the hollow space,

(i) the spaces between electrodes and separation medium can be filled with a liquid,

(k) heat discharge at the end faces is ensured by a temperature-control device containing buffer medium as a heat transport medium which is moved radially from the center to the periphery or in the opposite direction.

91. (New) The device as claimed in claim 90, wherein the hollow space is thermally insulated in the radial direction

92. (New) The device as claimed in claim 88, wherein a measuring head, in which the object-side focal lines of illumination and detection beam paths are (cylindrical-) confocally superimposed is assigned to the separating structure.

93. (New) The device as claimed in claim 88, wherein a photodetection apparatus is provided which

(l) has an illumination apparatus which illuminates an essentially two-dimensional, planar detection area in the separation medium or close to an interface of said separation medium, and

(m) has an optical system which projects the detection area in the form of an image (two-dimensionally) onto an image detector.

94. (New) The device as claimed in claim 88, wherein a mold section for preparing two-dimensionally arranged depressions in one of the interfaces of the separation medium or in a separate layer (sample plate) is assigned to the separating structure.

95. (New) The device as claimed in claim 94, wherein the separate layer (sample plate)

(q) extend essentially across two dimensions, and
(r) are completely composed of porous or permeable material and may contain pores,
(s) are designed in such a way that samples can be fixed locally therein,
(t) are designed so as to enable sample transport in the direction of the surface normal or in the direction opposite to the surface normal or,

(u) are temperature-resistant,
(v) are suitable for at least one cell culture,
(w) contain a medium suitable for separating sample mixtures, and
(x) are transparent.

96. (New) The device as claimed in claim 95, wherein electrodes or magnetic or magnetizable particles are two-dimensionally arranged in it or on its surface.

97. (New) A device for filling sample plates to be used in a process as claimed in claim 70, wherein

(y) the particles controlled by a sorter, for example an FACS device, or a cell sorter are selected, for example by deflecting in the direction of a pinhole diaphragm, and

(z) the selected particles are positioned on the sample plate by means of a translation device whose translational movement is controlled by the sorter.

98. (New) The device as claimed in claim 87, wherein a regular arrangement (array) of hollow bodies, tips or capillaries suitable for delivering or removing samples is assigned to the separating structure or the sample plates, and wherein volumes can be shifted, for example by means of a connection to a pneumatic system, or that electric field forces can act by way of mediation through an electrical contact.

99. (New) The method of using the process as claimed in claim 70 for fractionating and analyzing biological material.